

***Relationships between Characteristics of Autism Spectrum Disorder
and BDSM Behaviors***

An Honors Thesis (HONR 499)

by

Naomi Rachel Boucher

Thesis Advisor

Dr. George Gaither

Ball State University

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Abstract

The purpose of this study was to expand the research in sexuality by assessing the relationship between BDSM behaviors and characteristics (symptoms) of autism spectrum disorder (ASD). This relationship has not been explored, despite the increasing prevalence of both ASD individuals and those who practice BDSM (bondage & discipline, dominance & submission, and sadism & masochism) (Christensen, Baio, Braun, et al., 2016; Richters, Visser, Rissel, Grulich, & Smith, 2008). The similarities in repetitive or ritualistic behaviors as well as sensory stimulation needs and techniques in both symptoms of ASD and behaviors in BDSM suggest that there may be similarities in the two populations, which is important to examine (Leekam, Prior, & Uljarevic, 2011; Sagarin, Lee, & Klement, 2015). We hypothesized that motor movements would positively correlate with the BDSM Sensory behaviors, attention to details would positively correlate with BDSM Control behaviors, and social skills would negatively correlate with reported of number of sexual partners but positively correlate with masturbation frequency/use of objects during masturbation. All the hypotheses were supported except for the social skills and frequency of masturbation with an object. Instead, there was a positively correlation between social skills and frequency of masturbation with hands, which we believe may have something to do with the sensory input an object might bring.

Keywords: BDSM, kink, sexuality, alternative sexuality, autism spectrum disorder, autism

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Process Analysis

Examining the relationship between characteristics of autism spectrum disorder (ASD) and BDSM is a new and unexplored field of work, making it ideal to pursue for an Honors Thesis. Often in human sexuality research people with disabilities go underrepresented due to the misconceptions our society holds concerning disability and sex. Often it is believed that disability means a lack of sex or interest in sex. With autism in particular, there is often the perception of these individuals by the mental health community as well as general population that they are unable to understand sexuality, and therefore much of the research focuses on sex-negative topics like assault. In the counseling community, if the same negative attitudes society has are reflected in the therapist, a client with autism attempting to learn more about healthy sexuality may feel unheard or offended by these beliefs which could damage the therapeutic alliance. The same can be said for the BDSM community. Within the mental health profession especially the belief that people interested in BDSM must be mentally ill is present and impacts the effectiveness of therapy for clients who identify with the BDSM community. Again, negative beliefs about BDSM reflected by a therapist could cause a rupture in the therapeutic alliance and damage a kinky client's ability to heal or grow. This is also reflected in the literature that exists for the BDSM community, and much of the research on this topic in psychology reflects negative undertones. My thesis recognizes the agency that all individuals should be afforded and assumes not only that people with autism are interested in sexuality, but they might have interest in alternative forms of sexuality, such as BDSM or kink. My thesis also reflects the belief that a BDSM identity can be a healthy expression of human sexuality and should be given the same opportunity to be presented fairly and unbiasedly in research. Due to the stigma that exists in my

field, I felt it was important to conduct sex-positive research for two populations I care about in order to help erase the misconceptions that other professionals may hold.

To examine this relationship, I decided to focus on the symptoms that characterize autism spectrum disorder and how they may relate to different acts in BDSM a person practices. I did this because when examining the literature that exists on ASD and BDSM, I noticed that there seemed to be similarities in the types of behaviors people on the spectrum engaged in due to their symptoms and many acts found in BDSM. An example of this would be the similarity in repetitive motor movements in ASD, and the repetitive motions used for things like caning or whipping someone. ASD may also cause a person to have an intense need for consistency in daily routine which is something that can be observed in the consistency of Master/slave relationships with dynamic structures and rules. In order to test if these behaviors were related in any way I needed a way to measure the specific symptoms found in ASD. I developed several hypotheses about the relationship between ASD symptoms and BDSM behaviors as follows: if a participant reported higher levels of sensory stimulation needs on the ASD subscales, they would be more likely to report participating in physically stimulating acts like flogging and feeling it was very important to their sexual encounter, if a participant reported higher levels of needs for control or consistency on the ASD subscales they would report participating in more psychological BDSM acts like roleplay which have clearly defined and often consistent roles and feeling it was very important to their sexual encounter, lastly if a participant reported higher levels of sensory needs and control needs they would also report having less partners than those who do not have strong sensory and control needs. Once this was completed I just needed to find the best tools to examine if these relationships existed or not.

I then researched effective measures for quantifying the symptoms of ASD within an adult sample and found the Autism Quotient and the Adult Repetitive Behaviors Questionnaire – 2. These scale had relatively high reliabilities and good validities which ensured they were going to actually measure what I was aiming for in the study. These scales had been effective when used in non-ASD populations, which was important because I would not be able to sample from an ASD-only population due to people with disabilities being considered a protected class. I then used a sexual history questionnaire that my advisor developed with another student in her independent study to gather more information on the participants' sexual experiences like number of partners and their masturbation habits. Lastly, I researched measures for BDSM, but unfortunately all the measures examined in the literature were either not extensive enough to accurately capture all the variation that exists within the BDSM community, or were used in sex-negative research that I did not feel comfortable giving merit to by utilizing them in my survey. Due to these issues I made my own BDSM Behaviors Questionnaire by combining the insufficient behavior lists from Williams (2006) with those in Weierstall & Giebel (2016), and filled in the rest using Fetlife's list of popular fetishes. I then sent this list to local members of the kink community along with experts in BDSM Caroline Shahbaz and Peter Chirinos, creators of the website kinkknowledgeable. After it was edited slightly and improved, I created importance ratings for each behavior and entered all these scales into the online survey creator Qualtrics. I sent my survey out through Ball State's communication center, Reddit, Fetlife, and a BDSM group on Facebook, asking for BDSM community members only to fill it out. Once this was complete I was able to analyze the data using SPSS software.

From this project I learned that having representation for one's identity really matters. During the data collection process I got numerous emails from people on the spectrum who are a

part of the kink community telling me how grateful they felt that someone was actually doing sex-positive research on their identities and how they intersected. Some participants told me about their experiences with feeling stigma for both their ASD as well as BDSM, and how hard it is to remain proud of one's identity when so often in research and society those identities are challenged. These responses really affirmed for me that furthering sex-positive research and considering intersectionality within my research is so important. When I presented my thesis at a conference in Chicago, I was not surprised that a lot of people who do research in autism responded very strangely to my topic. It was clear to me that the belief that people with ASD cannot consent to sexuality was something many of those researchers held, which again shows how research like this is so important. Autism spectrum disorder has such a huge population with so many different people functioning at different levels and experiencing symptoms very differently from each other. Considering that, it makes sense that just like non-autistic people enjoy alternative forms of sexual expression, so too might people with ASD. Lumping an entire group of people together and considering them all incapable of understanding sexuality the way people without ASD do is insulting and unfair, and shows how the sex-negative research on ASD and sexuality has impacted even those who should be experts in their field. I learned that I am a very sex-positive person and that even under pressure of having to prove a point to people who appear to have their minds made up about ASD and sex I am an effective communicator when it comes to a topic I am so passionate about. It was nice to have reactions to this project on two ends of a spectrum, some overwhelmingly positive and excited for my research and some shocked and disapproving of it. I think it is important to get feedback like that, because it can help me measure how continuing research like this may change the attitudes of those around me and inspire new and more sex-positive work about ASD and sexuality. I also learned that while I

initially thought I was not going to enjoy doing research that I was proved very wrong and had a wonderful time learning about the research process and replicating it myself. I am quite proud of how this thesis turned out and I hope my passion for ASD and BDSM comes through in it.

Relationships between Characteristics of Autism Spectrum Disorder and BDSM Behaviors

Sexual topics that do not conform to societal standards of neurotypical, able-bodied heterosexuals in monogamous, conventional (vanilla) relationships are often underreported in research, which may leave the sexuality, relationships, and behaviors of a significant population both misrepresented and misunderstood (Hoff & Sprott, 2009; Shahbaz, & Chirinos, 2016). The sexualities of people in kink lifestyles (BDSM - bondage and discipline, dominance and submission, or sadism and masochism) and of people with autism spectrum disorder (ASD) are two that fall into this category (Hasson-Ohayon, Hertz, Vilchinsky, & Kravetz, 2014). Research dealing with kink or disability is limited and the number of studies involving both is minimal. When researchers do study these topics, it is often done in a sex-negative manner (Hoff & Sprott, 2009; Pecora, Mesibov, & Stokes, 2016). With a majority of research in both BDSM and ASD being negative, the goal of the present study is to unite these two groups in a sex-positive manner, in hope of inspiring more positive research into human sexuality – especially in regard to people from marginalized groups.

Due to the focus on BDSM behaviors in research, examining data on characteristics (i.e. symptoms) of autism instead of the diagnosis itself is more logical when assessing how the two populations intersect. Much like how BDSM is a set of behaviors, characteristics of ASD must be viewed in the same way. After all, it may not be the diagnosis of ASD which causes behaviors (if it were one may expect to see all people across the spectrum exhibiting the same behaviors), it is the individual's characteristics which manifest as different behaviors. Characteristics in autism need to be examined, because they are not simply restricted to those on the spectrum, which is why the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5; American

Psychiatric Association, 2013) must include significant impairment in order to make a diagnosis. Typically functioning individuals are often observed performing self-stimulating behaviors such as fidgeting with their hands or hair twirling, but those behaviors are not attributed to autism, even though those behaviors are found in people on the spectrum. (Lovaas, Newsom, & Hickman, 1987). These characteristics of disorders intersect, not the disorder itself, which is often where lines between comorbidity become hazy (Krueger & Markon, 2006). Because of this, the former director of the National Institute for Mental Health, Thomas Insel (2013), stated that mental disorders need to be viewed dimensionally as if on a spectrum. This changed new research to focusing on treating symptoms and behaviors rather than the “disorder” as a whole, and the present study aligns with that paradigm shift. Studying the way the behaviors typically discussed in ASD research and how they correlate with BDSM behaviors may provide insight to the relationship between people and their atypical behaviors (both in sexuality and outside it) as well as allow us to better conceptualize the purpose that BDSM behaviors and acts serve.

Sex Negativity in Research

Sex-negative research does not focus on sexuality as a healthy and normal behavior, but rather focuses on things like sexual assault or inability to conceptualize sexuality (Pecora et al., 2016). Sex negative research in kink often portrays BDSM behaviors negatively, which perpetuates the sadistic, consent-violating, and abusive image the Fifty Shades of Grey series creates for BDSM for the general population to consume (Tripodi, 2017). This stigma of BDSM as abusive and immoral practices does not only impact outsider view of BDSM however, and has further become a bias found within the psychology community who may work with kinksters in therapeutic settings. Hoff & Sprott (2009) examined this stigma and found that clients in therapy terminated their therapeutic relationships due to their counselor’s misunderstanding of their

behaviors or reported that their therapists pathologized their behaviors or called them “immoral.” In sex negative research on people with ASD, individuals are framed as genderless and asexual or as having sexualities that differs greatly from that of the normative population (Hasson-Ohayon et al., 2014; Pecora et. al, 2016). Pecora et al. (2016) reported a meta-analysis on research involving sexuality and high-functioning autism. In the 159 studies reviewed there were 13 sexual topics found and of those 13, eight were considered sex-negative topics (Pecora et al., 2016). As an example, some of these topics included examining parental concerns in their ASD child’s dating habits, reviewing sexual assault, and examining public sexual acts in people with ASD.

One of the only connections between BDSM and ASD examined is the link between sexual sadism and masochism and ASD. However, this was done in a controversial and sex-negative manner, and is therefore being discussed but this research does not intend to promote researching in only the negative side of sexuality. As with all topics, correlations may be present but they do not speak for the whole population. Sadism and masochism were examined in ASD, as these roles tend to elicit highly sensory experiences for those who practice them. For masochists, the sensory experience is far more tactile and for sadists it can be a visually stimulating experience (Kellaher, 2015). Sadism is a paraphilic interest in which an individual derives pleasure from exerting dominance and inflicting pain to a consenting partner; masochism is on the opposite end of the spectrum in which gratification is derived from having pain and dominance inflicted (APA, 2013; Mokros, Schilling, Weiss, Nitschke, & Eher, 2014). Sadism could be considered a paraphilic disorder if it was done in a nonconsenting manner or caused the individual significant distress (5th ed.; DSM-5, APA, 2013). The DSM-5 does however distinguish the difference between a sadistic disorder consensual sadism, which would be

referred to as a paraphilic interest (APA, 2013). Sadism is found more commonly in dominant partners in kink than it is in submissives, and within the kink community it is males who typically take on this role and are therefore more likely to exhibit a paraphilic interest in sadism (Wismeijer et al., 2013). This parallels how ASD is more common amongst males (Christensen et al., 2016; Weierstall & Giebel, 2016; Wismeijer et al., 2013). Sadistic and sexual fantasies have been linked to acts of violence for both sexual violence as well as murder (Allely, Minnis, Thompson, Wilson, & Gillberg, 2014; Mokros et al., 2014). In serial killers and mass murderers this is especially true, which has interesting implications given the speculations that numerous recent murderers are on the autism spectrum (Allely et al., 2014).

Allely et al. (2014) gathered online research on serial killers, psychopathy, violent crime, ASD, and brain trauma to see if there was evidence of overlap within these populations. They found 165 articles on 239 killers. Of these 239 people, 67 of them were thought to have high probability for being on the spectrum (Allely et al., 2014). This was decided by examining key word usage in the research and interviews, such as those individuals being described as “awkward,” “loners,” or known for atypical behavior that reflects symptoms of autism (Allely et al., 2014). This behavior could be social deficits, specified interests, or adherence to ritual. While this research suggests there may be a link between ASD and these murders, it is important to note this does not mean that those on the spectrum are dangerous. Nor does it mean all people with ASD have sadistic fantasies. In fact, people with autism are significantly less likely to commit violent crimes than the general population (Allely et al., 2014). What this does suggest however, is that sadism and the lack of empathy found in psychopathy and ASD may be linked. As a majority of both serial murderers and individuals with autism are male, this affirms parts of the male theory of mind. This theory states that ASD is an “over-masculinized” functioning of

the brain (Mokros et al., 2014). This theory, while controversial, operates on the idea that female minds are more empathizing while male minds are more systemizing, which accounts for both the extremely skewed gender prevalence in ASD as well as the fact that many females on the spectrum tend to be described as more gender nonconforming (Mokros et al., 2014). The occurrence of sadistic fantasies in individuals with ASD seems to correlate with the inability to process empathy correctly that characterizes autism (Tavassoli et al., 2017). In light of this, there appears to be a correlation between ASD and sadism or sadistic fantasies. However, what will be examined in the present study is the consensual sadism found kink, as the etiology of this and non-consenting sadism must be similar.

In light of this, the current study will not be operating by using sex-negative research as supportive data for these findings, but rather using this research to illustrate the need to explore the relationship between ASD and BDSM in a positive way. There is already stigma surrounding the kink community and people who are on the spectrum which mental health professionals should work to erase. Sex-positive research in sexuality assumes consenting and informed adults are voluntarily participating in sexual behaviors that make them happy and feel fulfilled. Sex-positive research is typically research that examines the benefits of sexuality and topics such as sexual self-esteem and health benefits of sexuality (Harden, 2014). The current study will be attempt to do the same, while recognizing the limitations within the literature.

Autism Spectrum Disorder

It is estimated currently that one in 68 births will be diagnosed with ASD, a drastic increase from the one in 150 estimated in 2000 (Christensen et al., 2016). The DSM-5 (APA, 2013, p. 53) definition and criteria for ASD is a form of “persistent deficit in social interaction or communication and at least two forms of restrictive and repetitive behaviors or interests that

develop early in the lifecycle of the individual and remain throughout their history.” This may or may not be coupled with deficits in social interaction which may include difficulty making and maintaining friendships, inability to understand how certain events or behaviors may affect others, or difficulties in verbal or nonverbal communication (APA, 2013). Not all of these characteristics must be present nor occur at a high intensity for an individual to be diagnosed. Social deficits stem from difficulty in cognitively processing empathy; which is being able to understand how other's thoughts and feelings may differ from the self. Individuals with ASD may not be able to identify social or facial cues that indicate how others are thinking or feeling which can lead to problems in effectively responding to those cues (Tavassoli, Miller, Schoen, Brout, Sullivan, & Baron-Cohen, 2017). Parents of children with autism may report feeling unloved or unappreciated by their child because of this type of deficit. However, those feelings are often very real and very present for their child, it is simply harder for an individual with autism to show those feelings (Tavassoli et al., 2017). This has romantic implications as well for those with ASD who go on to have partners in their adulthood. If a partner is unable to verbally or physically express their feelings how a partner without autism might, it could build tension in a relationship.

Incorrect sensory processing is also attributed to autism which can result in hypo-sensitivity to touch or hypersensitivity to touch (Tavassoli et al., 2017). This is when an individual requires higher levels of stimulation than the average person, or an individual may not like to be touched at all as it stimulates them too much, respectively. These sensory dysfunctions can lead to what are known as restrictive (specified) interests and repetitive behaviors that may lead to a greater deficit in social interaction for people with ASD (Leekam, Prior, & Uljarevic, 2011). This is especially so when these behaviors occur at a high frequency because

they are often seen as atypical or socially unacceptable. Examples of these behaviors could be rocking back and forth in a rhythmic pattern, hand flapping, sitting under a weighted blanket, or putting oneself in a confined area like wedging between a wall and a bookcase. However, those examples are more extreme behaviors. A less intense form of these behaviors may be an inability to focus unless using a fidget cube to stimulate themselves during class. Regardless of the form they take, these behaviors serve the purpose of meeting the sensory needs of the individual by providing either increased stimulation in their physical environment or decrease their level of stimulation (Leekam, Prior, & Uljarevic, 2011). Restrictive interests and repetitive behaviors may also involve a desire for constancy or ritual, such as knowing a schedule for a day, resisting/disliking change in the environment, or perhaps only wishing to wear certain types of clothing (Barrett, Uljarević, Baker, Richdale, Jones, & Leekam, 2015). Some behaviors may involve verbal repetition, or having an interest in a topic or object that seems obsessive in nature (APA, 2013). Due to the large variation in behaviors present as well as the intensity and frequency they occur at, it is valuable to examine each as its own characteristic of a person and not just as the diagnosis of autism itself.

While these behaviors and characteristics are most common in the ASD community, it is important to remember these can also be present in the absence of autism. Tavassoli et. al (2017) observed this by surveying 68 participants with ASD, 79 with sensory processing disorder (SPD), and 63 typically developing participants. Participants completed the Autism Quotient, the Empathizing Quotient, and the Sensory Processing Scales. Tavassoli et. al (2017) reported that ASD participants as well as SPD participants scored lower on the Empathizing Quotient scale, which measures how well one is able to pick up and respond to the emotions of others, than the typically developing participants. This suggests that there are populations without autism that

may have similar behaviors or characteristics to autism, as SPD is considered non-autistic and makes up 5-16% of the general population (Tavassoli et. al, 2017). Tavassoli et. al (2017) also observed that ASD participants and SPD participants scored similarly and significantly higher than the typical group on the Sensory Processing Scales implying that there is overlap between how ASD and SPD brains interpret sensory information. This is important as it shows these behaviors may not be as uncommon as thought, and that they are found in others without autism. Restrictive and repetitive behaviors also do not occur only in people with ASD. The rise in popularity of gadgets called Fidget Spinners, (originally designed for adolescence with ADHD but now used by non-diagnosed adolescence as well) is an indicator that self-stimulation is important to everyone. It is the same self-stimulation behavior occurring, but outside the context of ASD, it is considered “normal.” This makes it even more important to examine these characteristics, because it is likely this relationship is somewhat generalizable to those even not on the spectrum...like people who practice BDSM.

BDSM

BDSM is a form of sexuality that includes the enjoyment of bondage and discipline, dominance and submission, or sadism and masochism as well as any combination of those characteristics in both an inter-relational context or by oneself (Richters, Visser, Rissel, Grulich, & Smith, 2008). Although BDSM does not make up a majority of the behaviors exhibited in sexual encounters, roughly 1.8% of 19,307 sexually active Australians identified with practicing BDSM behaviors (Richters et. al, 2008). There was little empirical evidence on the number of S/M'ers in the United States, though with the recent popularity in mainstream media of the *Fifty Shades of Grey* series, the number is estimated to have increased (Tripodi, 2017). BDSM is often regarded as a “kinky sex” but many S/M'ers (people who participate in and identify with BDSM)

incorporate BDSM into a lifestyle without the context of sex while others may view it as their sexual orientation (Sagarin et al., 2015). Within the context of a BDSM scene (a scene refers to the interaction in which BDSM behaviors take place) there are many acts which may occur (Towsen, 2014). Typically there is a display of authority and dominance over another person or persons, which could take form in a roleplay or even simply in who performs the act onto the other person. Acts include, but are not limited to, sensory stimulation or restriction, role play of a fantasy, and even sexual acts. Though commonly a part of a BDSM scene, sexual activity within a scenario is not the goal of the encounter; however a sense of relief, fulfillment, emotional catharsis, and pleasure is what more frequently drives the S/M'ers to perform the acts of their choosing (Grollman, 2011). Some such acts could be impact play (striking a partner with an object like a paddle or using a hand), piercing play (piercing the skin with needles or hooks), wax play (dripping melted candle wax onto a partner), or even actions involving bodily fluids like blood or urine. Due to the role BDSM often has in fantasy fulfillment and emotional catharsis, Lindemann (2011) wanted to explore how this was being used for the submissives. She interviewed professional dommes, which are women paid to fulfill fantasies of their clientele by filling the dominant BDSM role. It was reported that most clients hire these women for almost therapeutic reasons such as emotional catharsis or even coping with and working through trauma, which can be very powerful and healing (Lindemann, 2011). Other S/M'ers utilize BDSM as an art form, a way of strengthening their interpersonal relationships, or even spirituality (Shahbaz & Chinios, 2016).

Again, sex-negative research on BDSM is a majority of what psychologists are exposed to which may skew a counselor's perception on the behaviors their clients engage in. This can be dangerous as Hoff & Sprott (2009) pointed out, because it may deter individuals from seeking

mental health treatment for fear a part of their identity will be misunderstood. Shahbaz & Chirinos (2016) delve into the sex-negative research in their book, *Becoming a Kink Aware Therapist*. However, the goal of their research is to correct the negative perspective of BDSM behaviors and educate therapists on how to properly handle S/M'ers in counseling. An example of this type of sex-negative research may depict sexual deviance as abuse or correlate S/M'ers to aggressive criminals which commit sexual crimes which may cause therapists to believe BDSM is immoral or unhealthy (Hoff & Sprott, 2009; Shahbaz & Chirinos, 2016). Their book, *Becoming a Kink Aware Therapist*, attempts to correct these views so researchers and counselors become knowledgeable on kink communities and no longer misinterpret BDSM acts as something negative.

Intersection of BDSM and Autism in Personality

With the significant populations of both S/M'ers and people on the spectrum there is likely an overlap in these populations, however it has not yet been reported. A recent predictor for sexual behaviors are personality characteristics (Lodi-Smith, Shepard, & Wagner, 2014). Lodi-Smith (et al., 2014) conducted an online study containing the Big Five Personality Inventory as well as the Multidimensional Inventory of Development, Sex, and Aggression, and the Dirty Dozen which assess the Dark Triad traits (John & Srivastava, 1999; Knight, Prentky, & Cerce, 1994; and Paulhus and Williams, 2002). To gather this data they posted their survey to Tumblr, Facebook, OKCupid, and other such social media sites and 224 men, 334 women, and 17 non-binary individuals completed their study. They found that for both men and women, as well as those who did not fall onto the binary, having high levels of openness, Machiavellianism, and narcissism were positively correlated with sexually deviant behaviors, or behaviors that would not fall into vanilla or typical sexual behavior (Lodi-Smith et al., 2014). It was also

observed that low conscientiousness as well as low emotional stability (neuroticism) were also positively correlated with sexually deviant behaviors (Lodi-Smith et al., 2014).

Wismeijer and van Assen (2013) researched personality characteristics as well as other factor like attachments styles among BDSM practitioners using the Netherlands largest online BDSM forum, bdsmzaken.nl. 907 participants were surveyed, split 51.3% male and 48.6% female and a control group was recruited using “Viva” magazine to observe any differences between BDSM and vanilla populations (Wismeijer & van Assen, 2013). The personality measure used was a Five Factor scale, Neo Five Factor Inventory, which assessed Openness, Contentiousness, Extraversion, Agreeableness, and Neuroticism (John & Srivastava, 1999). Compared to the control group, S/M’ers scored lower on agreeableness and higher on extraversion, openness, and neuroticism (Wismeijer & van Assen, 2013). Dominant participants scored significantly lower on neuroticism than switches (people who like to take on both dominant and submissive roles), submissives, and the control group. It was also observed that gender, while it did not play a role in sexual deviance, influenced what role the S/M’ers took in the bedroom (Wismeijer & van Assen, 2013). It appeared that men most commonly took a dominant role whereas women a submissive role, having implications for gender stereotypes and sexual expression within the BDSM community as well. A sex-positive finding which correlates with the theory that BDSM can be a cathartic and therapeutic experience for its participants, Wismeijer and van Assen (2013) observed that subjective well-being was significantly greater for those identifying with the BDSM lifestyle than in the control group.

Due to the distinct social deficits that autism is known for, questions were raised about whether or not a unique personality type for this group existed. Schriber, Robins, & Solomon (2014) predicted that due to impaired social functioning, reduced capacity for recognizing and

responding to emotions of others, and attention deficits due to sensory processing issues, people with autism would show lower levels of extraversion, agreeableness, and conscientiousness than people within a typical sample. To test this, they administered a Big Five Inventory to participants who scored above 75 on a Wechsler IQ test, to ensure the participants were high functioning enough to consent to the study as well as match them to the control group of 42 individuals who had similar IQ scores (Schriber et al., 2014). Participants took the personality inventory after completing an Autism Diagnostic Observation Schedule–Generic with a clinician which is a behavior based inventory to assess what type of restrictive or repetitive behaviors an individual exhibits. The purpose of this observation was to assess the differentiated social/verbal functioning among the 37 individuals with autism used in the study (Schriber et al., 2014). The averages for the typical group and ASD groups in this study revealed the ASD participants were higher in neuroticism but lower in extraversion, openness, and conscientiousness as predicted (Schriber et al., 2014). The ASD participants also scored lower in agreeableness than the typical group, which also matched Schriber's (et al., 2014) prediction. It was also found that neuroticism was significant predictor between the groups for who was on the spectrum (Schriber et al., 2014).

Comparing the aforementioned personality studies a trend becomes apparent in linking sexually deviant behaviors and the ASD community. While the Big Five Inventory and the Neo Five Factor Inventory are two different inventories, they measure the same five factors of personality, meaning they should yield very similar results. Findings showed low conscientiousness and agreeableness as well as elevated neuroticism in sexually deviant (BDSM) groups and ASD individual was typically observed. Logically, individuals with similar personality characteristics should gravitate towards similar interests and activities, though a study encompassing both ASD and BDSM has not yet been presented.

Intersection of BDSM and Autism in Sensory Stimulation/Deprivation

Many kink behaviors and repetitive behaviors in ASD are done for emotional regulation using sensory stimulation (Ambler et al., 2016; Minshawi et al., 2014). This is reflected in the emotional catharsis masochists may report after an intense scene (Lindemann, 2011) or the feelings of relief and calmness reported by individuals after they self-harm (DeAngelis, 2015). BDSM often involves practices which stimulate and restrict the sensory experience of those who participate (Shahbaz & Chirinos, 2016). Examples of this range from ice and wax play all the way to more extreme stimulation through methods like whipping or flogging or cutting one's skin (knife play). This may also be coupled with various forms of bondage to add another element of suspense or control. While acts involving sensation may elicit pain for S/M'ers who identify as masochists and the sadists who wish to inflict it, this is not always so (BDSM Education- Dictionary, 2008). BDSM acts all fall within a spectrum for those who participate, and there is no set intensity or frequency for acts involved. Some sensations like tickling, using ice cubes, or cutting off of airways (breath play) still stimulate the senses but do not necessarily elicit pain. Often when pain is being used within a BDSM context, it is for pleasure as well as for the catharsis and endorphin releasing aspect of the acts involved. Endorphins operate on the brain's opioid receptors and bring about a sense of pleasure and calm following their release, which can be brought about by pleasurable pain, exercise, and even sex (Dfarhud, Malmir, & Khanahmadi, 2014). This gives BDSM a physiological benefits that people on the autism spectrum might really enjoy or need in order to function.

It has been theorized this catharsis and endorphin release causes an almost altered state of consciousness that a S/M'er would come to, often referred to by the S/M population as "subspace" (Towsen, 2014). Subspace is a state of heightened vulnerability as the flood of

endorphins into the body causes a submissive partner to become fuzzy, often quiet, and easily influenced (Hines & Taylor, 2012). Reports from submissive partners within this space are often feelings of devotion and love, gratitude for their partners, and feeling an “out-of-body” experience (Shahbaz & Chirinos, 2016). When someone reaches this state it is typically time for a dom to begin aftercare to ensure their subs return to a normal state safely. To explore this idea of an altered state researchers randomly assigned 14 experienced S/M’ers who identified as switches to either a dominant or submissive role to act out in a scene (Ambler et. al, 2017). Participants were found using FetLife, a popular BDSM networking site. Participants were given self-report surveys to test for various other variables and a Stroop Test which measures executive functioning in the brain such as attention and cognitive flexibility. The Stroop Test was used in order to pick up on changes in cognitive functioning from before the scene and after, especially among those who took on the submissive role. It was predicted that those in dominant roles would improve their scores on the Stroop Test the second time because their consciousness would not be altered, while submissive scores would decline. Each participant went over informed consent and verbally consented with their assigned partners to the acts they would perform within a scene as well as to being watched by a researcher during the act, which they then performed. After the acts, Ambler (et al., 2017) administered the post-scene Stroop Test to the participants. As predicted, dominant scores improved, though not significantly, in the second Stroop Test, and submissive scores showed a significant decline (Ambler et al., 2017). While they cannot conclude how the change occurred, the decline in cognitive processing from before the scene to after the scene for the submissive partners receiving various forms of intense stimulation implies that there is at least some form of altered cognition that follows a heavy

BDSM scene. This change in cognitive functioning could be a sensation that S/M'ers are seeking in their encounters.

Sensory seeking stimulation occurs in people with autism in a variety of ways. People can be seen twirling their hair or tapping their hands rhythmically to increase the stimulation they receive from their environment. Sometimes this sensation seeking behavior can become more intense, and an individual with autism may self-harm by cutting, burning, or carving the skin as well as banging one's head against a wall (Mahatmya, Zobel, & Valdovinos, 2008). Researchers suggest this kind of self-injurious behavior occurs in approximately 50% of the ASD population (Minshawi, et. al, 2014). These behaviors can be paralleled to the acts in BDSM which involve knife play, wax or hot ash play, branding, or piercing play as well as various forms of impact play in which a submissive partner may be hit by a hand or an object. The purpose behind this type of behavior varies. Examining people who self-harm it becomes clear that behavior serves to emotionally regulate as well as bring about a sense of pleasure (DeAngelis, 2015). Self-harm as a means to reach emotional catharsis or pleasure does not differ much from the purpose of similar acts in BDSM that are used for the same purpose (Grollman, 2011). The only real difference being that harm is self-induced versus partner dealt. Due to this, it is logical to hypothesize that people with ASD may be more drawn to these acts in BDSM than some type of normative activity (sexual or otherwise), because it would meet their sensory needs in a way a vanilla encounter would not.

S/M'ers who practice rope bondage or shibari (Japanese decorative rope binding) often report a feeling of "safety" and "calm," while being in rope (Brame, Jacobs, & Brame, 1998). Those feelings may appeal to individuals with autism who use weighted blankets or enjoy firm pressured touches and compression clothing, as it brings them a similar sense of calmness

(Bestbier & Williams, 2017). People with autism that may be hypersensitive to touch may gravitate toward practices in BDSM acts using sensory deprivation objects (blindfolds, masks, etc.) or incorporating bondage or shibari in their play. This is a logical conclusion as practices such as these would yield similar sensations as a tight hug or weighted blanket could provide. Other restrictive BDSM behaviors such as wearing latex suits, strait jackets, or corsets may also provide the same form of compression as a weighted jacket which is often used in occupational therapy for students with autism who cannot sit under a blanket during school (Bestbier & Williams, 2017). Reports from S/M'ers who feel a sense of safety and calm in these clothing articles may very well be meeting the same sensory needs as an individual with autism, however this parallel has yet to be explored in research.

Rituals in BDSM and ASD

Rituals are a common occurrence in the lives of many individuals with autism. Symptoms of autism may cause someone to desire constancy in their daily routines as well as seeking a sense of fulfillment and pleasure in completing ritualistic behaviors like having an end of the day bathroom and bed routine (Marquenie, Rodger, Mangohig, & Cronin, 2011). These ritualistic behaviors occur so frequently among the ASD population that these behaviors in autism are researched and measured by methods such as the Adult Repetitive Behaviors Questionnaire - 2 (Barrett et al., 2015). Within the BDSM community, the process of setting up scenes, dungeons, and play sights often reflects a form of ritual that previous research has examined (Sagarin, Lee, & Klement, 2015; Williams, 2006). Examples of ritual in BDSM can include but are not limited to, setting up a scene and taking out all the toys, floggers, etc. to be used, restraining or tying a person with rope, and using a consistent number of strokes or hits (Sagarin et al., 2015). Sagarin et al. (2015) hypothesized acts with a lot of forethought and preparation were ones which adhere

most to the idea that BDSM is highly ritualistic because it requires the participants to spend a lot of time learning about specific acts of their choosing. This can be paralleled to the intense interests found in people with ASD (Leekam, Prior, & Uljarevic, 2011). Firewalking, piercings and suspension, needle play, and many forms of impact play are acts that fall into the category of extreme ritual (Sagarin et al., 2015). Most S/M'ers use specific numbers of strokes or needles, or in the sense of fire walking, steps to bring about aesthetic quality in the rhythm, symmetry, or feeling of these acts (Shahbaz & Chirinos, 2016). The result of completing these ritualistic acts is often a sense of fulfillment and satisfaction as well as an altered state in consciousness (Ambler et. al, 2013; Sagarin et al., 2015). As denoted by Shahbaz and Chirinos (2016) the altered state may also come from ritualistic behaviors in BDSM that come from cultural traditions like mimicking crucifixion, which can have spiritual benefits and fulfillments for those who participate in these types of acts.

Sexual Deviance in BDSM and Autism

Sexual deviance is any arousal or sexual preference for objects or activities that fall outside of societal norms (Lodi-Smith, Shepard, & Wagner, 2014). Previous research examining sexual behaviors of the ASD population has revealed a desire for and practice of what are considered “kinky” behaviors, though the actual prevalence of this has not yet been explored (Aker, 2017; Kellaheer, 2015). Often this deviance is referred to as a “kink,” “fetish” or “paraphilic interest” in the kink and psychological communities respectively. The DSM-5 defines a paraphilia as “any intense and persistent sexual interest other than sexual interest in genital stimulation or preparatory fondling with phenotypically normal, physically mature consenting human partners” (APA, 2013, p. 685). However the DSM-5 also specifies that there is a difference between a paraphilic *interest* and a paraphilic *disorder*. This alternative

terminology allows for individuals in the kink community to practice their paraphilic interests without being viewed as mentally ill, which is a sex-positive attribute of the DSM-5's diagnostic criteria. Because paraphilic interests are persistent and intense, they are not unlike the intense specified interests found in ASD, and can be conceptualized in similar ways. In action, paraphilic interests that an individual may have are not always acted upon given the societal standards that exist. This is true for fetishes like voyeurism and exhibitionism, because it is not legal or welcome to either view people naked or engaging in sex without their consent or to display ones naked self in public (Yarber & Sayad, 2016). While the typical population understands these social norms and standards, for someone with autism, these "unspoken" rules may need to be a lot more direct. Because of the social deficits found in ASD, individuals with ASD may perform these behaviors without recognizing why they should not and could face legal repercussions from these acts (APA, 2013; Richards, Miodrag, & Watson, 2006). It was found that over 75% of the ASD population display sexual characteristics and behaviors and while a smaller number does this outside the appropriate context, it is something the parents of adolescents with autism worry about (Beddows & Brooks, 2016). Despite this, the prevalence of voyeuristic and exhibitionistic behaviors and desires within kink and ASD populations lends to the question of whether or not the etiology of these behaviors or desires is the same. Public masturbation or nudity, flashing, or attempting to look at people undress are all very real behaviors parents must teach their child not to do, but these these are all also behaviors that people may fetishize and enact in kink communities (Beddows & Brooks, 2015).

The Present Study

The present study intends to explore whether or not there is a relationship between certain characteristics found in autism and the behaviors practiced in BDSM. Characteristics of autism

are those that involve a need for sensory stimulation or deprivation, ritualistic behaviors or adherence to a routine, fascination in objects or specific interests, and repetitive behaviors. Behaviors associated with BDSM involve everything from using masks or costumes to piercing the skin with needles. The present study will examine this relationship in a sex-positive manner, exploring members of the population as independent beings who harness their sexuality in a way that works for them, in an assumed consensual and safe environment. This will be done with the hope that future research on ASD individuals and their sexuality as well as research on BDSM will be done in a manner that reflects sex-positive values as well. The most important of these values is the agency given to people on the autism spectrum which believes that these people are capable of understanding and desiring human sexuality just as people without autism can.

Hypotheses. Due to the similarities in personality characteristics and underlying needs for sensory stimulation, ritual, or repetition in both ASD and BDSM populations, I hypothesize that the AQ's subscale for details and patterns will be positively correlated with the BDSM Behaviors Questionnaire due to the consistency and structure often found within BDSM dynamics (Leekam, Prior, & Uljarevic, 2011; Sagarin, Lee, & Klement, 2015; Wismeijer & van Assen, 2013). I hypothesize that scores on the RBQ-2A's subscale for motor movements will positively correlate with the BDSM Behaviors Questionnaire due to BDSM behaviors like flogging or caning involving repetition. Higher scores on the RBQ-2A as well as the AQ in the sensory subscales will positively correlate with the BDSM Behaviors Questionnaire due to the intense sensory stimulation or even deprivation that is found in various acts within the BDSM community. Considering how ASD impacts social skills and communication, AQ subscale for social skills is predicted to negatively correlate with reports of number of partners and partnered sexual experiences on the Sexual History Questionnaire but will positively correlate with

masturbation frequency and use of objects during masturbation (Leekam, Prior, & Uljarevic, 2011). For these relationships I will be examining Pearson r correlation coefficients. Scores on the RBQ-2A subscale for atypical sensory interests and reported use of objects, tools, or toys on both the Sexual History and BDSM Behaviors Questionnaire will likely show a positive relationship. Finally, I will examine the overall AQ scores and see my prediction that subscales will be better predictors of BDSM behaviors than overall score on this scale. Lastly, a factor analysis on the BDSM Behaviors Questionnaire will be run to examine the number of factors that might be used in consideration for expanding the survey in later projects. Exploratory analyses will be done using t -tests, additional correlations, and one-way ANOVAs.

Method

Participants

Participants were recruited from Reddit, Fetlife, and Ball State University's communication center using an online link. There was no compensation for participation and the survey was completely anonymous. 584 participants responded to the survey but of that only 504 responses were kept. 76 were excluded due to only answering their age and gender, two for being too young to participate, one for not consenting, and one for taking under 2 minutes to complete the survey. The age range of these 504 participants was from 18 to 82 years old ($M = 26.18$, $SD = 10.67$). Of these participants a majority (54.2%) were female, 275 (54.3%) identified heterosexual, 447 (88.3%) were white, and, 179 (42.5%) identified with the submissive role during BDSM play. For men, 49% identified as dominant, 63.8% of women identified as submissives, and 48.6% of transgender or other gender participants identified as switches. Of the participants, 19 reported having had an ASD diagnosis sometime in their life prior to taking the survey. More information on the demographics can be found in *Table 1*.

Table 1.

Descriptive Statistics

Variable	Comm Center (n = 256)	Reddit (n = 168)	Fetlife (n = 69)	Facebook (n = 11)
Gender Identity				
Male	79 (30.9%)	74 (44%)	29 (42%)	4 (36.4%)
Female	158 (61.7%)	77 (45.8%)	33 (47.8%)	6 (54.5%)
Transgender or Other	19 (7.5%)	17 (10.1%)	7 (10.1%)	1 (9.1%)
Sexual Orientation				
Heterosexual	156 (60.7%)	81 (48.2%)	34 (49.3%)	4 (33.3%)
Queer	70 (27.3%)	66 (39.2%)	24 (34.8%)	6 (50%)
Asexual or Other	31 (12.1%)	21 (12.5%)	11 (15.9%)	2 (16.7%)
Race or Ethnicity				
White	228 (88.7%)	152 (91%)	56 (81.2%)	11 (91.7%)
Asian	2 (0.8%)	5 (3%)	1 (1.4%)	0 (0%)
Latinx	4 (1.6%)	4 (2.4%)	4 (5.8%)	0 (0%)
Black	6 (2.3%)	0 (0%)	0 (0%)	0 (0%)
Multi-Racial	13 (5.1%)	3 (1.8%)	5 (7.2%)	1 (8.3%)
Other	3 (1.2%)	3 (1.8%)	2 (2.9%)	0 (0%)
Education Level				
High school or less	6 (2.3%)	4 (2.4%)	0 (0%)	0 (0%)
Completed high school	170 (66.1%)	61 (36.3%)	14 (20.3%)	5 (41.7%)
Associate's degree	25 (9.7%)	27 (16.1%)	6 (8.7%)	3 (25%)
Bachelor's degree	27 (10.5%)	54 (32.1%)	18 (26.1%)	4 (33.3%)
Advanced degree	29 (11.3%)	22 (13.1%)	31 (44.9%)	0 (0%)
Diagnosis	9 (3.5%)	15 (8.9%)	5 (7.2%)	0 (0%)
Power Exchange Identity				
Dominant	41 (19.7%)	28 (20.6%)	23 (35.4%)	0 (0.0%)
Submissive	81 (38.9%)	69 (50.7%)	24 (36.9%)	5 (50%)
Switch	86 (41.3%)	39 (28.7%)	18 (27.7%)	5 (50%)
Age: M (SD)	22.81 (8.31)	26.45 (6.40)	37.99 (15.05)	26.92 (8.28)

Measures

The questionnaire was created online using Qualtrics Software. An informed consent form was presented prior to the scales, next came the demographics questions and the BDSM Behaviors Questionnaire, all other scales were then displayed in random order.

Demographics. The survey began with a list of demographics questions (age, sex, educational level...etc), including a question about whether or not a participant has ever been diagnosed with ASD or other variations of that diagnosis. More detail can be found in Appendix A.

Autism Spectrum Quotient (AQ). Baron-Cohen (et al., 2001) designed the AQ as a 50-item questionnaire to quantify characteristics of autism in a population with normative IQ levels. For this study an abbreviated 26 question version was used. The AQ was designed to assess three subscales: social skills, details/patterns and communication/mindreading (Hoekstra et al., 2008). Social skills are assessed with statements such as “I frequently find that I don’t know how to keep a conversation going,” and includes a total of twelve items. Detail/patterns are assessed with statements such as “I like to plan any activities that I participate in carefully,” and includes eight items. Lastly, communication/mindreading is assessed using six statements such as “I find it difficult to work out people’s intentions” (Hoekstra et al., 2008). It is these three subscales the current study will be utilizing. Responses are on a four point Likert scale ranging from “*definitely disagree*”, “*slightly disagree*”, “*slightly agree*”, and “*definitely agree*.” Half of the items will score 1 point for the answer of “*slightly agree*” or “*definitely agree*,” the other half of the items will score 1 point for the answers, “*slightly disagree*” or “*definitely disagree*.” Reliability for the scale was tested by two parties and yielded similar results, having an internal consistency ranging from 0.66 to 0.73 and in the other study the internal consistency was found

to be around 0.86 (Hoekstra et al., 2008; Lundqvist & Lindner, 2017). More detail on this scale can be found in Appendix B.

Adult Repetitive Behaviors Questionnaire-2 (RBQ-2A). The RBQ-2A (modified from form one which is used to assess children) is a self-report questionnaire with 20 items designed to assess in depth what specific repetitive behaviors are associated with ASD in the adult population (Barrett et al., 2015). The RBQ-2A examines behaviors in four subscales: motor movements, adherence to routine, restricted interests, and atypical sensory interests. Repetitive motor movements are assessed with five questions such as “Do you repetitively fidget with items? (e.g. spin, twiddle, bang, tap, twist, or flick anything repeatedly)” Adherence to routine is assessed by four questions such as “Do you insist on doing things in a certain way or re-doing things until they ‘just right’?” Restricted interests by three questions such as “Do you play the same music, game or video, or read the same book repeatedly?” Lastly, atypical sensory interests are assessed seven questions such as “Do you have a fascination with specific objects (e.g. trains, road signs, or other things?).” In this study the last question which is open-ended was excluded due to irrelevance to the survey and its inability to be scored. For every section responses are given on a 3-point scale. Response choices are based on behavior within the last month, and are divided into three choices for each item deviating slightly from *never/rarely*; *mild/occasional*; *marked/notable*. Internal consistency for this tool was a 0.83 when tested in a non ASD population, and 0.91 when tested in a population with ASD, indicating high reliability regardless of population being assessed (Barrett et al., 2015). Scores for the AQ and RBQ-2A were used together in study and there was a positive correlation between the RBQ-2A scores for ritualistic behavior and the AQ’s scores for patterns subscale (Barrett et al., 2015). It was also found that

higher scores on the AQ coordinated with higher scores on the RBQ-2A overall, but not in any other distinct subscale (Barrett et al., 2015). More detail on this scale is found in Appendix C.

Sexual History Questionnaire. Aker (2017) created a sexual behavior inventory combining the questionnaire in Gaither (1996) with two questions related to masturbation behaviors. The 22-item questionnaire was created to gather information about an individual's sexual history. The current study used five of these items. Respondents chose from statements indicating how many times they had taken part in each act described. Before the items, the question "how many times have you done the following?" was asked. Statements described various partnered sexual acts, such as: "*Manual manipulation of your genitalia by a female;*" as well as individual sexual acts such as: "*At approximately what age did you start masturbating?*" More detail on how this scale was utilized is found in Appendix D.

BDSM Behaviors Questionnaire. The BDSM Behaviors Questionnaire is survey that I developed specifically for this research project. Participants first choose from dominant, submissive, and switch identities that they take on during their play. They are then presented with a list of 22 BDSM-related behaviors and must choose how important the item is for their play, rated on a 5 point Likert scale ranging from "*unimportant*" to "*extremely important.*" There is then one follow-up question for switches that asks if the importance ratings they gave are different when they are in a dom versus sub role. I developed this survey by combining behaviors from Williams (2006) with the behaviors listed in Weierstall & Giebel (2016). While these provided an adequate basis for the questionnaire, there were common acts still missing. Due to this, I looked into Fetlife's list of popular fetishes to fill in the behaviors these two sources did not include which I felt were necessary to capture the variation that exists within the BDSM community and acts that people may practice. I put the behaviors into Qualtrics and sent

out my preliminary survey to experts in BDSM, including experienced kink members within my community as well as Caroline Shahbaz and Peter Chirinos, the authors of *Becoming a Kink Aware Therapist* (2016). These experts took the survey and provided feedback and suggestions to the list in order to combine similar acts while expanding others until it was determined to be a comprehensive and generalizable list of BDSM acts. More information on this questionnaire can be found in Appendix E.

Procedure

The study was created using Qualtrics and distributed using a link to the Ball State Communication Center through email, posted to the C.I.C.K. Facebook page, posted on Reddit subreddit r/samplesize and posted two different Fetlife forums. Participants were prompted with information about the survey and a link to the study itself. An informed consent page explaining anonymity and potential risks associated with the survey prompted participants to check a box if they give their consent to participating. If participants checked the box, the survey opened and they were asked their age. If they did not consent to the study, the survey automatically skipped to the end and no data was collected on that participant; the same happened if they filled in their age as under 18. Participants who were 18 or older and consented to the survey began the questionnaire. The questionnaire contained a randomized version of all the scales aforementioned. Upon completion, the participant was shown a page thanking them for their time. From Qualtrics, the data was entered into SPSS for statistical analyses to be run.

Results

Preliminary Findings

The BDSM Behaviors Questionnaire was a scale created specifically for this project, so before testing hypotheses the internal consistency was reported using Cronbach alpha ($\alpha = .89$).

We then ran a factor analysis on the 22 behavior items and seeing which items factored similarly with other items. This was done to examine if some items which would be more likely to correlate with the sensory subscales versus the control/consistency subscales or if all the items in the total BDSM Behaviors Questionnaire would correlate equally. While 5 initial factors were found, only one of the factors had every item loaded onto it while the others were not utilizing the entire scale. This did not answer that question. To test this idea further we examined the items closely and contemplated how to use the data. It was decided to group the items together into subscales based on whether the items were physically stimulating or seemed to have more of a psychological element to them. There were 22 behavior items so each subscale had 11 items, more detail on how the items were divided can be found in Appendix E. The reliabilities were calculated and several items were moved around based on their ambiguous characteristics (ex. mummification is both stimulating and psychological) and when the reliabilities evened out it was decided to call the subscales control (psychological aspect of kink) and sensory (what one would experience physically). Both the sensory ($\alpha = .827$) and control ($\alpha = .797$) subscales had high reliabilities, which validated the utility of this measure.

Independent samples t-tests were run to determine whether or not the scales worked for the sample. If they did there should be a difference in mean scores between the subscales and people who reported having a diagnosis of ASD or another name for the disorder (depending on the year of their diagnosis. No significant differences between those who had at least one diagnosis and those who had no diagnoses was found for the number of partnered sexual experiences or frequency of masturbation with hands. However, there was a significant different between those with and without a diagnosis for frequency of masturbation using an object. There were also significant differences between those who reported an ASD diagnosis and those who

did not on the BDSM sensory subscale, the AQ and all of its subscales, as well as several RBQ-2A subscales. More detail on the independent samples t-tests can be found in *Table 2*.

Table 2.

Difference in scale mean scores between those with ASD diagnosis and those without.

Variable	ASD Diagnosis	N	M(SD)	t	p
BDSM Total Score					
	Yes	22	2.59(0.78)	1.68	.09
	No	372	2.34(0.67)		
BDSM Sensory					
	Yes	22	2.54(0.93)	1.99*	.047*
	No	372	2.20(0.76)		
BDSM Control					
	Yes	22	2.64(0.70)	1.10	.27
	No	372	2.47(0.70)		
AQ Total Score					
	Yes	29	15.34(5.19)	5.57*	.001*
	No	477	10.27(4.74)		
AQ Details Patterns					
	Yes	26	2.73(1.78)	2.76*	.01*
	No	430	1.87(1.52)		
AQ Communication					
	Yes	26	3.42(1.55)	5.22*	.001*
	No	429	1.78(1.56)		
AQ Social Skills					
	Yes	29	7.21(2.85)	5.06*	.001*
	No	477	4.29(3.02)		
RBQ Total Score					
	Yes	26	1.84(0.42)	3.52*	.001*
	No	427	1.55(0.41)		
RBQ Repetitive Movements					
	Yes	26	1.87(0.44)	2.27*	.02*
	No	427	1.65(0.49)		
RBQ Sensory					
	Yes	26	1.69(0.51)	1.63	.10
	No	419	1.52(0.53)		
RBQ Internal Stimulation					
	Yes	26	1.90(0.51)	4.17*	.001*
	No	419	1.52(0.45)		
Partnered Sexual Experiences					
	Yes	24	1.45(1.25)	-1.64	.10
	No	397	1.91(1.05)		

Masturbation with Objects					
	Yes	24	1.25(1.57)	.76*	.01*
	No	393	1.05(1.23)		
Masturbation with Hands					
	Yes	24	2.08(1.25)	1.16	.25
	No	391	1.81(1.11)		

* Significant $p < .05$ (2-tailed)

Hypothesis Testing

The first hypothesis tested was that the AQ's subscale for details and patterns would be positively correlated with the BDSM Behaviors Questionnaire. This was tested using a Pearson's r correlation, which found there was a significant positive correlation $r(394) = .104$, $p = .040$.

The second hypothesis was that scores on the RBQ-2A's subscale for motor movements would positively correlate with the BDSM Behaviors Questionnaire. Again, this hypothesis was tested using a Pearson's r correlation, but there was no significant relationship. However, when an analysis was run on the RBQ-2A's subscale for sensory interests with the BDSM Behaviors Questionnaire it was found they were positively correlated, $r(393) = .135$, $p = .007$.

To examine if this measure was not only reliable but also valid, several correlations were run. The BDSM Behaviors Questionnaire contains items which are typically done repetitively in practice and should positively correlate with scores on the RBQ-2A because it measures behaviors which occur repetitively (Barrett et al., 2015; Shahbaz & Chirinos, 2016). The scales were found to be positively correlated $r(394) = .102$, $p = .043$. The BDSM Behaviors Questionnaire subscale for control should correlate with several of the RBQ-2A's subscales due to that scale measuring behaviors which control repetitively and ritualistically (Barrett et al., 2015). With similarities in the consistency of acts stemming from ASD symptoms and those found in BDSM, the control subscale should also positively correlate with the details/patterns subscale on the AQ because that scale measures routines in a person's life (Hoekstra et al.,

2008). A significant positive correlation for these subscales was observed $r(392) = .103, p = .04$.

These correlations and more can be found in *Table 3*.

Table 3.

Correlations between ASD and BDSM scales.

	BDSM Total Score	BDSM Control	BDSM Sensory
AQ Total			
Pearson Correlation	-.03	-.01	-.03
N	394	394	394
AQ Details/patterns			
Pearson Correlation	.09*	.103*	.06
N	392	392	362
AQ Communication			
Pearson Correlation	-.01	-.004	-.01
N	392	392	392
AQ Social Skills			
Pearson Correlation	-.09	-.09	-.09
N	394	394	394
RBQ Total Score			
Pearson Correlation	.10*	.11	.08
N	393	393	393
RBQ Sensory			
Pearson Correlation	.14*	.12*	.13*
N	393	393	393
RBQ Motor Movements			
Pearson Correlation	.04	.05	.03
N	393	393	393
RBQ Internal Sensation			
Pearson Correlation	.08	.11*	.06
N	393	393	393
BDSM Sensory			
Pearson Correlation	.94*	.73*	1
N	394	394	394
BDSM Control			
Pearson Correlation	.92*	1	.73*
N	394	394	394

* Significant $p < .05$ (2-tailed).

The AQ subscale for social skills was predicted to negatively correlate with number of partnered sexual experiences but should positively correlate with masturbation frequency and use

of objects during masturbation on the Sexual History Questionnaire. This was tested using a Pearson r correlation, but no relationship was found between social skills and frequency of masturbation using an object. Further correlations were run on the AQ and RBQ-2A with the Sexual History Questionnaire. A significant negative correlation between AQ scores and number of partnered sexual encounters was found, $r(417) = -.245$, $p = .000$. There was also a significant positive relationship between number of partnered sexual experiences and frequency of masturbation with an object $r(421) = .234$, $p = .000$. This and more relationships can be seen in *Table 4*.

Table 4.

Correlations between ASD and Sexual Experiences.

Variable	Autism Quotient	Adult Repetitive Behaviors Questionnaire	Partnered Sex
Partnered Sexual Experiences			
Pearson r	-.245*	-.163*	1
N	421	420	421
Masturbation (Hands)			
Pearson r	.040	.141*	-.002
N	415	414	414
Masturbation (Objects)			
Pearson r	-.063	-.026	.243*
N	417	416	416

* Significant $p < .05$ (2-tailed).

Due to the variability found within the data on the Sexual History Questionnaire, cutoff scores were created in order for analyses to be run. Cutoff scores were created in order to categorize the responses into five groups. These cutoff categories and the distributions of the responses for the number of partnered sexual experiences, frequency of masturbation using hands, and frequency of masturbation using objects can be found in *Table 5*.

Table 5.

Distribution of score on the Sexual History Questionnaire.

Variable	0	1	2	3	4
Partnered Sexual Experiences					
Number of experiences	0	1-5	6-17	18-50	51+
% of sample	5.7%	39.5%	30%	21.2%	9.3%
Frequency of masturbation in last 3 months (Objects)					
Number of times	0	1-6	7-16	17-36	37+
% of sample	0%	41.9%	27%	20.3%	10.8%
Frequency of masturbation in last 3 months (Hands)					
Number of times	0	1-14	15-45	46-90	91+
% of sample	9.4%	39.4%	29.5%	21.3%	9.8%

Exploratory Findings

The BDSM Behaviors Questionnaire asked participants to rate each item on an importance scale for their BDSM encounters. We wondered which items on the BDSM scale were rated most important for the largest amount of people and which seemed to be the least important for the participants. This was done by first calculating the mean and standard deviation of each BDSM Behaviors Questionnaire item, and then calculating the means and standard deviations again after splitting the data file between people with and without an ASD diagnosis. Overall, commands and demands was the highest rated for the participants which indicates this was the most important item on the scale for people to incorporate to their BDSM practice ($M = 3.82$, $SD = 1.15$). The lowest overall item was crucifixion which indicates this item was the least important to incorporate into practice for the sample ($M = 1.21$, $SD = .66$). When examined for only people who did not have an ASD diagnosis these items were still the most ($M = 3.82$, SD

1.14) and least important ($M = 1.21$, $SD = .66$). However, for those who reported having a diagnosis of ASD bondage and restraint was the most important to incorporate into play ($M = 4.00$, $SD = 1.01$) while crucifixion still remained the least important ($M = 1.32$, $SD = .78$). The overall importance ratings on this scale is as follows, from most to least important: Commands and demands ($M = 3.82$, $SD = 1.15$), bondage and restraint ($M = 3.51$, $SD = 1.22$), sex toys ($M = 3.38$, $SD = 1.31$), caning/flogging/whipping ($M = 3.21$, $SD = 1.32$), breath play/control ($M = 3.08$, $SD = 1.41$), blindfolds/hoods/masks ($M = 3.03$, $SD = 1.33$), role play/pet play/age play ($M = 2.49$, $SD = 1.35$), uniforms/collars ($M = 2.41$, $SD = 1.35$), light beatings ($M = 2.33$, $SD = 1.41$), degradation/humiliation ($M = 2.30$, $SD = 1.44$), gags ($M = 2.27$, $SD = 1.17$), face slapping ($M = 2.24$, $SD = 1.40$), genital or breast torture ($M = 2.16$, $SD = 1.34$), temperature play ($M = 2.13$, $SD = 1.16$), objects or atypical sex toys ($M = 2.00$, $SD = 1.18$), corsets/ straitjackets ($M = 1.80$, $SD = 1.07$), body suspension ($M = 1.78$, $SD = 1.10$), bodily fluids play ($M = 1.77$, $SD = 1.18$) stretching/fisting ($M = 1.74$, $SD = 1.10$), knife play ($M = 1.69$, $SD = 1.17$), mummification or cling wrap ($M = 1.37$, $SD = .81$), and crucifixion ($M = 1.21$, $SD = .66$).

Discussion

This study aimed to contribute to the existing research on ASD and sexuality as well as research on BDSM. We examined whether the two populations (ASD and BDSM) converged in terms of how the symptoms someone may experience in relation to ASD may relate to the behaviors displayed within a BDSM context. We did this because quite often research in sexuality of people with ASD focuses on sex-negative topics, as well as assumes that those on the spectrum would practice vanilla sex, or no sex at all (Pecora et al., 2016). It is important for sexuality research to reflect all aspects of sexuality and give agency to people on the spectrum by looking at alternative sexuality and sexual identities of people on the spectrum just as we do for

those who are not. This is an important study because it does give agency to people with autism as well as being the first study of its kind conducted. To explore the relationship between characteristics of ASD and BDSM behaviors we developed our own questionnaire to measure BDSM acts, we measured sexual history of participants to gain a fuller understanding of their sexuality, and utilized the AQ and RBQ-2A which measure the prevalence of ASD symptoms within an individual. After this, we tested our hypotheses about the relationship between ASD characteristics and BDSM behaviors by running correlation analyses. Several interesting and validating findings were in the demographics section of this study. It was observed that a very large percentage of the populations surveyed had an ASD diagnosis, and those were just by the participants who were willing to report their mental health history. The prevalence of ASD in the general population is about 1%, however in this study three of the four populations sampled had well over that percentage of people who reported a diagnosis (3.5%, 8.9%, and 7.2%). The fourth population sampled had a 0% prevalence of ASD, but it also had an N value of 11 which could be why a diagnosis was not reported. The overall prevalence of ASD reported in this study was 5.7% of the population, which is 5 times the prevalence of the general population (Christensen et al., 2016). In an exploratory chi square analysis of ASD diagnosis and gender and sexuality, it was observed that people who reported having a diagnosis were more likely to be gender atypical and have a lesbian/gay/bi sexuality, whereas those who reported having no diagnosis were more likely to be female and heterosexual. This is reflective of what is typically seen in the gender identity and sexuality of people on the spectrum; those with ASD are more likely than the general population to be gender nonconforming as well a sexual minority (Gilmour, Schalomon, & Smith, 2012; Van Schalkwyk, Klingensmith, & Volkmar, 2015). Lastly, the significance of the ASD population within a BDSM-specific sample is meaningful because it not only validates

the research on ASD and sexuality in that people on the spectrum enjoy sex, sexuality, and relationships the way people who are not on the spectrum do, but also because it shows that there is a population of BDSM participants that have autism and might use it to fulfill the needs of their symptoms (Aker, 2017; Kellaher, 2015). Finding such a large number of participants who had an ASD diagnosis in the BDSM community samples were drawn from was especially interesting because nowhere in the recruitment advertisement or title of the questionnaire was the word “autism” used, which suggests that this population just has a high prevalence of ASD naturally.

The correlations observed demonstrate that there was a positive relationship between having a strong attention to detail and need for structure or control and participating or being interested in BDSM behaviors that allow for control and structure. In addition, there was a positive relationship between having sensory needs and participating or being interested in BDSM behaviors which are very sensory stimulating. While these correlations suggest there is some relationship between BDSM behaviors and having symptoms of ASD, the correlations observed were quite small. To test this further, we created mean scores for the BDSM questionnaire and its subscales was done and correlations were run for the AQ and RBQ-2A and all the related subscales. This yielded no different findings than using the total scores, which is what the correlations in this study were reported using. We also created 2 variables for the BDSM behaviors splitting the reported important ratings between “extremely important” and “important” to examine whether correlations run using each variable yielded different findings. However, this did not change the results.

Part of this may be the fact that participants with an ASD diagnosis were not sampled, and it would be interesting to examine whether these correlations would be different if sampling

from an ASD only population. If it truly is the diagnosis of ASD more than the symptoms that determine whether or not the behaviors are related to BDSM, then this would account for the small effect sizes. This hypothesis was supported by the exploratory correlations run.

Participants who reported having a diagnosis showed stronger positive correlations between sensory BDSM behaviors and sensory stimulation, as well as for BDSM control behaviors and having a need for attention to detail and structure than those who did not report a diagnosis. This finding makes sense given how incorrect sensory processing is often observed in those on the autism spectrum but not quite as much in the general population (Tavassoli et al., 2017). A need for consistency and routine can also characterize people on the spectrum, which explains why participants with a diagnosis reported this more frequently (5th ed.; DSM-5, APA, 2013).

The BDSM Behaviors Questionnaire was developed specifically for this study due to the lack of comprehensive BDSM scales in sex-positive research. This was created by combining behaviors from Williams (2006) with behaviors from Weierstall & Giebel (2016) and then using Fetlife's list of popular fetishes to fill in the behaviors these two sources did not include. Many of the scales reviewed included very general acts with very specific acts, which did not make a lot of sense for what this study aimed to measure. For example, some scales used items like "spanking with kitchen utensils" rather than just spanking, which would easily skew results and not account for the fact that spanking is the same regardless of what specific objects are utilized for the act. Having a more generalizable list of behaviors was necessary because we wanted to examine if the behaviors related to symptoms of ASD, and if the items were too specific like scales in previous literature, the amount of responses for those items might not have meant anything meaningful to this relationship. This scale has a strong reliability in addition to its

comprehensive and generalizable list of behaviors, which makes it beneficial for use in future research on BDSM.

We split the BDSM Behaviors Questionnaire into two subscales: sensory and control. Initially this was attempted by use of a factor analysis, but it did not work as initially hypothesized. Instead, we looked at the items and divided them by whether they impacted the senses or were more psychological in their impact. It was decided to group the more psychological items under “control” and the strictly physical items under “sensory.” While this study made a distinction between the subscales on the BDSM Behaviors Questionnaire, the strong correlations between the subscales suggests that the creation of the subscales may be irrelevant. The significant relationships between the AQ and RBQ-2A and the subscales appeared in the BDSM Total score –not just the individual subscales - during analyses, and was actually stronger in all but one case. Due to this, in future work with this scale it may not be necessary to make a distinction between “control” or “sensory” behaviors. In addition, the reliability of both subscales are strong, but not as strong as the reliability of the questionnaire as a whole, which also implies the division of the scale may not be beneficial.

What was observed in the preliminary findings using t-tests validates the significant correlations found between BDSM control behaviors reported and the need for consistency and attention to details, the sensory needs and the BDSM sensory behaviors, and the internal sensation and BDSM sensory behaviors. This implies that for the participants with ASD, their ability to fulfill their sensory and control needs was especially important in the behaviors they felt were important to them in a BDSM context. These findings appear to demonstrate that for people with ASD, their symptoms drive what BDSM behaviors they participate in more so than those without ASD. The t-tests demonstrate that the current study used measures which

effectively picked up differences between a non-ASD sample of BDSM participants and those who had an ASD diagnosis. This was especially so in the sensory subscales utilized, which may mean that for people with ASD, BDSM is used most prominently for the sensation different acts can bring. The independent samples t-tests also revealed that every variable measured besides partnered sexual experiences, people who reported having a diagnosis scored higher than those who did not. Out of 14 variables examined using t-test, nine came out to have significant differences between the means of these subscales for people with and without a diagnosis. This suggests that while it is not always significant, perhaps the way people with autism and people without autism function within a sexual or BDSM relationship is slightly different. The differences in the scores also validated that this study does work to find the differences between people with and without ASD.

There were negative correlations between AQ and RBQ-2A mean scores and the number of partnered sexual experiences a person reported. When considering the social deficits that are inherent to ASD, these findings make a lot of sense. However, it might also be possible that those who reported higher scores on the AQ and RBQ-2A scales were more selective with their partners because they have more specific needs to which they are interested in fulfilling in their sexual experiences. Initially we believed that the frequency of masturbation with an object would be positively correlated with scores on the AQ and RBQ-2A, however this was not the case. The AQ and RBQ-2A means scores were positively correlated with how frequently a person masturbated with their hands. This could be for sensory reasons, where one might prefer masturbation with their hand because it is more tactile, or perhaps using an object would over stimulate someone while masturbating. From this perspective, it makes more sense than looking at masturbating with objects as something which may reflect a restrictive interest which is what

we initially believed would be the case. This is validated by the positive correlation between number of partnered sexual experiences reported and the frequency of masturbation with objects. People who reported having more social skills deficits and sensory needs had less partners and therefore used objects to masturbate less.

When scoring the Sexual History Questionnaire we decided to split the responses on the number of partnered sexual experiences into categories from 0 to 4, due to the responses ranging from zero up to 1600. To do this we followed the model used in Turchik & Garske (2008) to categorize their responses to the number of sexual partners. They did this by dividing the groups as follows: 0 = 0 partners, 1 = the cutoff number where 40% of the responses fell, 2 = the cutoff number where 30% of the responses fell, 3 = the cutoff number where 20% of the responses fell, and 4 = the cutoff number where 10% of the responses fell (Turchik & Garske, 2008). By doing this, the current study's cutoff scores were as follows: *0 = 0 partners, 1 = 1 to 5 partners, 2 = 6 to 17 partners, 3 = 18 to 50 partners, and 4 = 50 or more partners*. It was much easier to tell how different the scores between men and women were for how many partners they typically had, as well as the difference in scores between people who reported having an ASD diagnosis or not. This also made it a bit more clear what having a lot of partners might look like for the BDSM community and what an average range of partners is as well. We used the same cutoff percentages for frequency of masturbation with hands or objects as well for similar reasons.

Finally, people who did not have ASD reported that their most important behavior to incorporate into a BDSM experience was the use of commands and demands, but for those who had ASD it was bondage and restraint. This difference made a lot of sense when considering the symptoms of ASD and how they impact the needs of the individual – and this is a perfect example of these symptoms in effect. As previously discussed, ASD can cause deficits in a

person's ability to communicate effectively with a partner which might make it harder for some to be able to give commands to a person, or even receive them in some instances. This was observed in the t-tests where people with a diagnosis were significantly more likely to experience communication deficits on the AQ. However, in the same analyses, people with ASD scored significantly higher on sensory subscales for both the AQ and RBQ-2A which indicates their high sensory stimulation needs. This is reflected by their ratings of bondage as the most important behavior to incorporate into BDSM play, because bondage is can be both highly stimulating and depriving, which would appeal to those with sensory processing needs. This suggests the way people with ASD incorporate BDSM into their lives may really depend on the symptoms they experience rather than just what they think would be exciting.

Implications of the Research

The results of this study confirm that at least some relationship between BDSM behaviors and symptoms of ASD does exist, which has implications for counselors working with both kinky clients and clients with autism. The misconception that people with ASD are asexual is proving once again to not be true. In addition, this study challenges the idea that if people with ASD are sexual, they are going to participate in vanilla forms of sexuality. This has important implications for teaching sex education to people with ASD, because this research demonstrates that having a knowledge of alternative forms of sexuality is needed to ensure adequate education on consent, safety, and forms of sexuality can be given to those on the spectrum. Mental health professionals especially need to be informed of this because there are issues that may arise that which are specific to a BDSM identity, and be willing to address this form of sexuality with their ASD clients in therapy. Professionals in the psychology field should also recognize their clients' strengths and limitations due to their ASD symptoms and be prepared to work through how to

navigate situations in relationships and sexuality that their symptoms may pose a challenge to. A professional should not assume that because of a client's ASD they will be interested in only vanilla sexuality. This study demonstrates that it is important to learn more about BDSM in order to better address issues where BDSM and ASD converge in a therapeutic setting. This may be familiarizing oneself with different practices in BDSM that could help a client with ASD meet their needs, such as using sadism and masochism for the emotional regulation a client might be inclined to self-harm for. Another implication of this study may be that the way in which we conceptualize BDSM as a form of sexuality might not be generalizable to all people in the community. If the behaviors serve to meet the sensory or psychological needs of a person and are done in a sexless context, then labelling it a form of sexuality may not be entirely accurate.

As we observed in the independent samples t-tests, people with and without autism had multiple significantly different scores on the subscales utilized in this study. In the exploratory analyses, the importance of behaviors for people with and without a diagnosis also differed in the case of what behavior is more important, as well as the findings which showed people with a diagnosis rated all behaviors higher than those without. This indicates that perhaps the way in which people with ASD experience sexuality and BDSM is different than those who are not on the spectrum. That is not to say their sexualities and experiences are far different from each other, but it does provide insight to areas that clients with ASD might need to address in a therapeutic setting. For example, there was a significantly different score on the communication subscale which has implications for how people on and off the autism spectrum will be able to communicate with and understand their partners. This has implications that clients on the autism spectrum looking to be in an intimate relationship may need to practice communication and understanding boundaries and consent and how to ask permission while with a counselor or

mental health professional. The significantly lower number of partnered sexual experiences for people with ASD may also have something to do with this difference in communication as well. It would be much harder to find a partner and have a sexual or BDSM relationship with them, if one is unable to read body language or social cues, or even know how to go about asking to engage in sexual activity with them.

From this study we can also infer that because both people with ASD and people who practice BDSM experience stigmatization, that clients who are members of both communities may struggle with two forms of prejudice in society and even by mental health professionals (Hoff & Sprott, 2009; Pecora et al., 2016). This double stigma may cause distress in a client and could be an important aspect of a client's life to address in therapy. Due to this, a counselor should be aware of their own biases towards both populations, and actively seek to learn more about what BDSM or autism are and how the individual experiences those concepts so as to be able to meet their clients with informed empathy. In addition, this study also demonstrates that behaviors in BDSM may serve purposes to individuals that are not only for sexual gratification. This is important because it can help counter the arguments that people who practice or identify with BDSM are immoral or mentally ill because it gives a purpose to the behaviors.

Future Research

Currently there are no other studies linking BDSM and ASD together. Due to this, and the fact that so many studies on ASD and sexuality or BDSM focus on negative topics like assault or abuse, furthering the sex positive research in this area is important (Hoff & Sprott, 2009; Pecora, Mesibov, & Stokes, 2016). The large population of participants with ASD found within the BDSM populations sampled would be interesting to explore further. Research on why such a large number of ASD individuals are drawn to the BDSM community as well as how

S/Mers with ASD feel they are welcomed into the community could be beneficial to working with clients in therapeutic settings, as well as understanding the culture that surrounds BDSM. Future research may want to examine whether or not those who participate in BDSM behaviors are doing it consciously to fulfill their different sensory or psychological needs or if they just enjoy those activities for similar reasons to those who are not on the spectrum. Looking more in depth at why people with ASD have lesser sexual experiences than those who do not would also be beneficial to understanding how people with ASD experience relationship formation and sexuality. Research examining the possible double stigmatization that ASD people who are kinky experience and what might mediate the negative effects of that stigma for those individuals. Due to the correlations found between BDSM acts and sensory needs, a study on why people with ASD get out of their sensory experiences could be interesting and provide more framework for how BDSM might be used for emotional catharsis or regulation. More research expanding upon the BDSM Behaviors Questionnaire would also be helpful in possibly expanding upon the behaviors utilized. Research comparing this scale to existing scales would provide insight as to whether or not the measure continues to be reliable as well as valid.

Limitations

This study was the first of its kind conducted, and as such there were several limitations which are important to address. The data was collected using an online self-report questionnaire. Due to this, it is hard to know how truthful the participants' answered the questions and whether or not appearing more socially desirable factored into what BDSM acts or ASD symptoms participants were willing to report. Given the stigma that often surrounds kink behaviors as well as disability, it is especially challenging to gauge just how accurate the data collected is. The small sample of people reporting having been given an ASD diagnosis may have impacted why

the correlations were small, and having been able to survey an ASD population may have provided more insight to the true relationship between BDSM behaviors and ASD symptoms. The shortened AQ had lower reliabilities than the full version which as may have played a role in the correlation strengths observed. However, given how easily a participant can get distracted during an online survey, we made the choice to use this version in hope of keeping the study time short. The BDSM questionnaire was a limited list of only 20 behaviors which does not accurately represent all that may occur in a BDSM scene or dynamic. The BDSM questionnaire also used importance ratings as a measurement of the listed behaviors. This was done so that even if the participant had not been able to try a behavior it would allow for them to answer that they were interested in it, which the researchers felt was an important distinction. However, this may not have been the most effect measurement of these behaviors and perhaps measuring how often the behaviors occurred for a participant would have yielded different results.

References

- Aker, C. (2017). An assessment of the relationship between symptoms characteristic of autism spectrum disorder and sexual behaviors (*Unpublished thesis*). Ball State University.
- Allely, C. S., Minnis, H., Thompson, L., Wilson, P., & Gillberg, C. (2014). Neurodevelopmental and psychosocial risk factors in serial killers and mass murderers. *Aggression and Violent Behaviors*, 289-298. Retrieved November 8, 2017.
- Ambler, J. K., Lee, E. M., Klement, K. R., Loewald, T., Comber, E. M., Hanson, S. A., . . . Sagarin, B. (2016). Consensual bdsm facilitates role-specific altered states of role-specific consciousness: a preliminary study. *Psychology of Consciousness: Theory, Research, and Practice*, 4(1), 75-91. Retrieved October 1, 2017.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed). Washington, DC: Author
- Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley E., (2001). The autism-spectrum quotient (AQ): Evidence from asperger syndrome/high-functioning autism, males and females, scientists and mathematicians. 31: *Journal of Autism and Developmental Disorders* 5-17.
- Barrett, S. L., Uljarević, M., Baker, E. K., Richdale, A. L., Jones, C. R. G., & Leekam, S. R. (2015). The adult repetitive behaviours questionnaire-2 (RBQ-2A): A self-report measure of restricted and repetitive behaviours. *Journal of Autism and Developmental Disorders*, (doi: 10.1007/s10803-015-2514-6)
- Beddows, N., & Brooks, R. (2015). Inappropriate sexual behaviour in adolescents with autism spectrum disorder: what education is recommended and why. *Early Intervention in Psychiatry*, 10(4), 282-289. doi:10.1111/eip.12265

- Bestbier, L., & Williams, T. I. (2017). The immediate effects of deep pressure on young people with autism and severe intellectual difficulties: demonstrating individual differences. *Occupational Therapy International*, 2017, 1-7. doi:10.1155/2017/7534972
- BDSM Education- Dictionary. (2008). Retrieved October 03, 2017, from <https://www.bdsm-education.com/dictionary.html>
- Bourdage, J. S., Lee, K., Ashton, M. C., & Perry, A. (2007). Big five and HEXACO model personality correlates of sexuality. *Personality and Individual Differences*, 43(6), 1506-1516. doi:10.1016/j.paid.2007.04.008
- Brame, G. G., Jacobs, J., & Brame, W. G. (1998). *Different loving: the world of sexual dominance and submission*. London: Arrow.
- Christensen, D. L., Baio, J., Braun, K. V., Bilder, D., Charles, J., Constantino, J. N., ... & Lee, L. C. (2016). Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2012. *MMWR Surveill Summ*, 65, 1-23.
- DeAngelis, T. (2015). A new look at self-injury. *Monitor on Psychology*, 46(7), 58. Retrieved October 2, 2017.
- Dfarhud, D., Malmir, M., & Khanahmadi, M. (2014). Happiness & health: The biological factors- systematic review article. *Iran Journal of Public Health*, 43(11), 1468-1477. Retrieved October 3, 2017.
- Gilmour, L., Schalomon, P. M., & Smith, V. (2012). Sexuality in a community based sample of adults with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 6, 313-318.

- Grollman, E., PhD. (2011, September 14). Not just 'kinky' sex!: The many meanings of BDSM, By Brandy Simula. Retrieved September 11, 2017, from <https://kinseyconfidential.org/kinky-sex-meanings-bdsm-brandy-simula/>
- Harden, P. K. (2014). A sex-positive framework for research on adolescent sexuality. *Perspectives on Psychological Science* , 9(5), 455-469. doi:<https://doi.org/10.1177/1745691614535934>
- Hasson-Ohayon, I., Hertz, I., Vilchinsky, N., & Kravetz, S. (2014). Attitudes toward the sexuality of persons with physical versus psychiatric disabilities. *Rehabilitation Psychology*, 59(2), 236-241. doi:10.1037/a0035916
- Hines, S., & Taylor, Y. (2012). *Sexualities, past reflections, future directions*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan.
- Hoekstra, R. H., Bartels, M., Cath, D. C., & Boomsma, D. (2008). Factor structure, reliability and criterion validity of the autism-spectrum quotient (AQ): A study in dutch population and patient groups. *Journal of Autism and Developmental Disorders*, 38(8), 1555-1566. doi:10.1007/s10803-008-0538-x
- Hoff, G., & Sprott, R. A. (2009). Therapy experiences of clients with BDSM sexualities: listening to a stigmatized sexuality. *Electronic Journal of Human Sexuality*, 12. Retrieved September 6, 2017.
- Insel, T. (2013, April 29). Post by Former NIMH Director Thomas Insel: Transforming Diagnosis. Retrieved December 04, 2017, from <https://www.nimh.nih.gov/about/directors/thomas-insel/blog/2013/transforming-diagnosis.shtml>

- John, O. P., & Srivastava, S. (1999). The Big-five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (Vol. 2, pp. 102–138). New York: Guilford Press.
- Kellaher, D. C. (2015). Sexual behavior and autism spectrum disorders: an update and discussion. *Current Psychiatry Reports*, 17(4). doi:10.1007/s11920-015-0562-4
- Knight, R. A., Prentky, R. A., & Cerce, D. D. (1994). The development, reliability, and validity of an inventory for the Multidimensional Assessment of Sex and Aggression. *Criminal Justice and Behavior*, 21, 72-94
- Krueger, R. F., & Markon, K. E. (2006). Reinterpreting comorbidity: a model-based approach to understanding and classifying psychopathology. *Annual Review of Clinical Psychology*, 2(1), 111-133. doi:10.1146/annurev.clinpsy.2.022305.095213
- Leekam, S. R., Prior, M. R., & Uljarevic, M. (2011). Restricted and repetitive behaviors in autism spectrum disorders: A review of research in the last decade. *American Psychological Association*, 137, 562-593. Retrieved September 5, 2017.
- Lindemann, D. (2011). BDSM as Therapy? *Sexualities*, 14(2), 151-172. Retrieved October 18, 2017.
- Lodi-Smith, J., Shepard, K., & Wagner, S. (2014). Personality and sexually deviant behavior. *Personality and Individual Differences*, 70, 39-44. doi:10.1016/j.paid.2014.06.012
- Lovaas, I., Newsom, C., & Hickman, C. (1987). Self-stimulatory behavior and perceptual reinforcement. *Journal of Applied Behavior Analysis*, 20(1), 45-68. doi:10.1901/jaba.1987.20-45

- Lundqvist, L., & Lindner, H. (2017). Is the autism-spectrum quotient a valid measure of traits associated with the autism spectrum? A rasch validation in adults with and without autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 2080-2091. Retrieved September 18, 2017
- Mahatmya, D., Zobel, A., & Valdovinos, M. G. (2008). Treatment approaches for self-injurious behavior in individuals with autism: Behavioral and pharmacological methods. *Journal of Early and Intensive Behavior Intervention*, 5(1), 106-118. doi:10.1037/h0100413
- Marquenie, K., Rodger, S., Mangohig, K. and Cronin, A. (2011), Dinnertime and bedtime routines and rituals in families with a young child with an autism spectrum disorder. *Australian Occupational Therapy Journal*, 58: 145–154. doi:10.1111/j.1440-1630.2010.00896.x
- Minshawi, N., Hurwitz, S., Fodstad, J., Biebl, S., Morris, D., & Mcdougale, C. (2014). The association between self-injurious behaviors and autism spectrum disorders. *Psychology Research and Behavior Management*, 125. doi:10.2147/prbm.s44635
- Mokros, A., Schilling, F., Weiss, K., Nitschke, J., & Eher, R. (2014). Sadism in sexual offenders: Evidence for dimensionality. *Psychological Assessment*, 26(1), 138-147. doi:10.1037/a0034861
- Oliva, F., Dalmotto, M., Pirfo, E., Furlan, P. M., & Picci, R. L. (2014). A comparison of thought and perception disorders in borderline personality disorder and schizophrenia: Psychotic experiences as a reaction to impaired social functioning. *BMC Psychiatry*, 14
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36, 556 –563

- Pecora, L. A., Mesibov, G. B., & Stokes, M. A. (2016). Sexuality in high-functioning autism: A systematic review and meta-analysis. *Journal Of Autism And Developmental Disorders*, 46(11), 3519-3556. doi:10.1007/s10803-016-2892-4
- Richards, D., Miodrag, N., & Watson, S. L. (2006). Sexuality and developmental disability: Obstacles to healthy sexuality throughout the lifespan. *Developmental Disabilities Bulletin*, (1), 137-155. doi:10.1007/11195.1573-6717
- Richards, C., Oliver, C., Nelson, L., & Moss, J. (2012). Self-injurious behaviour in individuals with autism spectrum disorder and intellectual disability. *Journal of Intellectual Disability Research*, 56(5), 476-489. doi:10.1111/j.1365-2788.2012.01537.x
- Richters, J., Visser, R. O., Rissel, C. E., Grulich, A. E., & Smith, A. M. (2008). Demographic and psychosocial features of participants in bondage and discipline, "somasochism" or dominance and submission (BDSM): Data from a National Survey. *The Journal of Sexual Medicine*, 5(7), 1660-1668. doi:10.1111/j.1743-6109.2008.00795.x
- Sagarin, B.J., Lee, E.M., & Klement, R. K. (2015). Somasochism without sex? Exploring the parallels between bdsm and extreme rituals. *Journal of Positive Sexuality*, 1. 50-55.
- Schoen, S. A., Miller, L. J., & Sullivan, J. C. (2014). Measurement in sensory modulation: The Sensory Processing Scale Assessment. *American Journal of Occupational Therapy*, 68(5), 522. doi:10.5014/ajot.2014.012377
- Schriber, R. A., Robins, R. W., & Solomon, M. (2014). Personality and self-insight in individuals with autism spectrum disorder. *Journal of Personality and Social Psychology*, 112-130. doi:10.1037/a0034950
- Shahbaz, C., & Chirinos, P. (2016). *Becoming a kink aware therapist*. New York, NY: Routledge.

- Tavassoli, T., Miller, L. J., Schoen, S. A., Brout, J. J., Sullivan, J., & Baron-Cohen, S. (2017). Sensory reactivity, empathizing and systemizing in autism spectrum conditions and sensory processing disorder. *Developmental Cognitive Neuroscience*, 1-6. doi:10.1016/j.dcn.2017.05.005
- Towsen, N. (2014, May 12). The hidden language of kinksters. Retrieved October 03, 2017, from https://www.vice.com/en_us/article/3b7ap9/the-hidden-language-of-kinksters
- Tripodi, F. (2017). Fifty shades of consent? *Feminist Media Studies*, 17(1), 93-107.
- Turchik, J. A., & Garske, J. P. (2008). Measurement of Sexual Risk Taking Among College Students. *Archives of Sexual Behavior*, 38(6), 936-948. doi:10.1007/s10508-008-9388-z
- Van Schalkwyk, G. I., Klingensmith, K., & Volkmar, F. (2015). Gender Identity and Autism Spectrum Disorders. *Yale Journal of Biology and Medicine*, 88(1), 81-83.
- Weierstall, R., & Giebel, G. (2016). The sadomasochism checklist: A tool for the assessment of sadomasochistic behavior. *Archives of Sexual Behavior*, 46(3), 735-745. doi:10.1007/s10508-016-0789-0
- Williams, D. (2006). Different (painful!) strokes for different folks: A general overview of sexual sadomasochism (SM) and its diversity. *Sexual Addiction & Compulsivity*, 13(4), 333-346. doi:10.1080/10720160601011240
- Wismeijer, A. A., PhD, & Van Assen, M. A., PhD. (2013). Psychological characteristics of bdsm practitioners. *Journal of Sexual Medicine*, 10(8), 1943-1952. Retrieved September 29, 2017.
- Yarber, W. L., & Sayad, B. W. (2016). *Human sexuality: diversity in contemporary America*. New York, NY: McGraw-Hill Education.

Appendix A

Demographics Questions

Demographics questions are given in multiple choice format which include a space to fill in any identifiers the participant uses that are not a part of the response options given.

1. What is your gender identity?
 - Male, Female, Transgender, or Other (please specify)
2. What is your sexual orientation?
 - Heterosexual, Gay or Lesbian, Bisexual, Asexual or Other (please specify)
3. What is your race/ethnicity?
 - African, Black, Asian, Latinx, Native American, Multi-racial, White (Caucasian), or Other (please specify)
4. What is the highest level of education you completed?
 - 8th grade or less, some high school, Completed high school, Associates Degree, Bachelor's Degree, More than a Bachelor's Degree
5. Have you ever been diagnosed with the following (check all that apply)
 - Autism Disorder, Autism Spectrum Disorders, Asperger's, Pervasive Developmental Disorder

Appendix B

Autism Spectrum Quotient Scale (Abbreviated) – 4 Point Likert Scale

Responses of “definitely agree” and “slightly agree” to questions 5, 7, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, and 25 will score 1 point. Responses of “definitely disagree” or “slightly disagree” to questions 1, 2, 3, 4, 6, 8, 9, 10, 11, 20, and 26 score 1 point. Simon Baron-Cohen (et al., 2001) found that within this scale there are three subscales measuring social skills, details/patterns and communication/mindreading.

Autism Spectrum Quotient Scale

I am good at social chit-chat*

I find social situations easy*

I enjoy social occasions*

I enjoy social chit-chat*

I frequently find that I don't know how to keep a conversation going

I enjoy meeting new people*

I find it hard to make new friends

When I was young, I used to enjoy playing games involving pretending with other children*

I find myself drawn more strongly to people than to things*

I enjoy doing things spontaneously*

I find it very easy to play games with children that involve pretending*

I would rather go to a library than to a party

I notice patterns in things all the time

I usually notice car number plates or similar strings of information

I am fascinated by numbers

I am fascinated by dates

I tend to notice details that others do not

I like to plan any activities that I participate in carefully

I often notice small sounds when others do not

It does not upset me if my daily routine is disturbed*

People often tell me I keep going on and on about the same thing

When I'm reading a story, I find it difficult to work out the characters' intentions

I find it difficult to work out people's intentions

I am often the last to understand the point of a joke

Other people frequently tell me that what I've said is impolite, even though I think it is polite

If there is an interruption, I can switch back to what I was doing very quickly*

Appendix C

The Adult Repetitive Behaviors Questionnaire – 2

This scale measures more in depth the types of rituals or repetitive behaviors that may be present in someone on the autism spectrum. Questions are answered with the following options: 1 -6 on a 4 point Likert scale from *never or rarely*, *one or more times daily*, *15 or more times daily*, to *30 or more times daily*. 7 – 12 on a 3 point scale of *never or rarely*, *mild or occasional*, *marked or notable*. 13 – 16 a 4 point scale of *never or rarely*, *mild or occasional (does not affect others)*, *marked or notable (occasionally affects others)*, *serious or severe (affects others on a regular basis)*. Questions 17 – 19 were based on a 3 point Likert scale from *never or rarely*, *mild or occasional (not entirely resistant to change or new things)*, *marked or notable (will tolerate changes when necessary)*, *serious or severe (will not tolerate any changes)*. Question 20 was left out of this survey due to irrelevance and it not being included in scoring. Barrett (et al., 2015) found this scale to be positively correlated with the AQ, meaning that the lower or higher the scores on the AQ were, the lower or higher the scores on the RBQ – 2A were as well.

1. Do you like to arrange items in rows or patterns?
2. Do you repetitively fiddle with items? (e.g. spin, twiddle, bang, tap, twist, or flick anything repeatedly?)
3. Do you spin yourself around?
4. Do you rock backwards and forwards, or side to side, either when sitting or when standing?
5. Do you pace or move repetitively? (e.g. walk to and fro across a room, or around the same path in a garden?)
6. Do you make repetitive hand and/or finger movements? (e.g. flap, wave, or flick your hands or fingers repeatedly?)
7. Do you have a fascination with specific objects? (e.g. trains, road signs, or other things?)
8. Do you like to look at objects from particular or unusual angles?
9. Do you have a special interest in the smell of people or objects?
10. Do you have a special interest in the feel of different surfaces?
11. Do you have any special objects you like to carry around?

12. Do you collect or hoard items of any sort?
13. Do you insist on things at home remaining the same? (e.g. furniture staying in the same place, things being kept in certain places, or arranged in certain ways?)
14. Do you get upset about minor changes to objects? (e.g. flecks of dirt on your clothes, or minor scratches on objects?)
15. Do you insist that aspects of daily routine must remain the same?
16. Do you insist on doing things in a certain way or re-doing things until they are "just right"?
17. Do you play the same music, game or video, or read the same book repeatedly?
18. Do you insist on wearing the same clothes or refuse to wear new clothes?
19. Do you insist on eating the same foods, or a very small range of foods, at every meal?

Appendix D

Sexual History Survey

This survey was developed for a previous study on autism and sexual behaviors (Aker, 2017).

The purpose of this survey is to examine specific sexual behaviors that one has previously engaged in with their partners or by themselves, and how often they occur.

Please answer each of the following questions. You may skip any items that you do not feel comfortable answering.

- 1.) With how many different partners have you engaged in any type of sexual activity (from kissing with tongue contact to anal sex) in your life?
- 2.) Approximately how many times per month have you masturbated **using an object** over the **past 3 months**?
- 3.) Approximately how frequently have you masturbated **using your fingers or hands** over the **past 3 months**?
- 4.) At approximately what age did you first masturbate?
- 5.) What objects do you use to masturbate?

Appendix E

BDSM Behaviors Questionnaire

What power exchange identity do you typically take on?

- Dominant, Submissive, or Switch

Below are 4 lists of different types of BDSM behaviors that one might engage in, or objects that one might incorporate, by themselves or with a partner in BDSM play.

For each behavior, please rate the importance of the behavior to you on a scale from 1 to 5, with 1 = *unimportant* to 5 = *extremely important*. Check "Unimportant" if you have not engaged in the behavior and do not wish to try it. You may rate the behavior if you have not tried it but are interested in it. There are two subscales, sensation and control. The sensation subscale includes: caning/flogging/whipping...etc, face slapping, objects (atypical sex toys, veggies, etc.), bodily fluids play, sex toys, temperature play (wax, ice, fire, etc.), stretching (anus, mouth, vagina, etc.), body suspension (rope or hooks), genital/breast torture, light beatings, and knife play. The control subscale includes: commands/demands (verbal and nonverbal), breath play/control/choking, corsets/straitjackets/latex, crucifixion, mummification/cling wrap, blindfolds/hoods/masks, bondage/restraints/ropes, uniforms/collars, degradation/humiliation, roleplay/pet play/age play, and gags. There is one final question asking switches if the importance of these behaviors differs from when they are in a dominant or submissive role.

Role play/pet play/age play

Gags

Commands/demands (verbal & nonverbal)

Caning/flogging/whipping/paddling/spanking

Bondage, restraint, ropes...etc.

Body suspension (rope or hooks)

Temperature play (ice, wax, fire, etc.)

Uniforms/collars

Crucifixion

Corsets/straitjackets

Mummification or clingwrap

Stretching/fisting (anus, mouth, vagina, urethra...with hands or objects)

Breath play/control/choking

Genital or breast torture

Face slapping

Knife play

Light beatings

Blindfolds, hoods, or masks

Sex toys (vibrators, fleshlights, dildos, vacuum pumps, plugs, etc.)

Objects (atypical sex toys, tools, vegetables, etc.)

Degradation/humiliation

Office of Research Integrity
Institutional Review Board (IRB)
2000 University Avenue
Muncie, IN 47306-0155
Phone: 765-285-5070

DATE: January 5, 2018

TO: Naomi Boucher, Undergrad

FROM: Ball State University IRB

RE: IRB protocol # 1147147-1

TITLE: Sexual Behaviors, BDSM, Social Skills, Language Style, and Range of Interests Survey

SUBMISSION TYPE: New Project

ACTION: APPROVED

DECISION DATE:

REVIEW TYPE: **EXEMPT**

The Institutional Review Board reviewed your protocol on and has determined the procedures you have proposed are appropriate for exemption under the federal regulations. As such, there will be no further review of your protocol, and you are cleared to proceed with the procedures outlined in your protocol. As an exempt study, there is no requirement for continuing review. Your protocol will remain on file with the IRB as a matter of record.

Exempt Categories:

	Category 1: Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.
XXXXX	Category 2: Research involving the use of educational test (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior
	Category 3: Research involving the use of educational test (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under category 2, if: (i) the human subjects are elected or appointed officials or candidates for public office; or (ii) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
	Category 4: Research involving the collection of study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or

	if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.
	Category 5: Research and demonstration projects which are conducted by or subject to the approval of Department or agency heads, and which are designed to study, evaluate or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in methods or levels of payment for benefits or services under these programs.
	Category 6: Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed which contains a food ingredient at or below the level and for a use found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

Editorial Notes:

1. As long as protocol remains anonymous, then this is a minimal risk study.

While your project does not require continuing review, it is the responsibility of the P.I. (and, if applicable, faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to human research participants arise in connection with this project. **Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project.** Please contact (ORI Staff) if you are unsure whether your proposed modification requires review or have any questions. Proposed modifications should be addressed in writing and submitted electronically to the IRB (<http://www.bsu.edu/irb>) for review. Please reference the above IRB protocol number in any communication to the IRB regarding this project.

Reminder: Even though your study is exempt from the relevant federal regulations of the Common Rule (45 CFR 46, subpart A), you and your research team are not exempt from ethical research practices and should therefore employ all protections for your participants and their data which are appropriate to your project.

D. Clark Dickin, PhD/Chair
Institutional Review Board

Christopher Mangelli, JD, MS, MEd, CIP/
Director
Office of Research Integrity